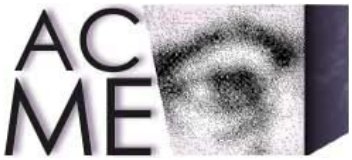

A Feminist in the Forest: Situated Knowledges and Mixing Methods in Natural Resource Management[1]

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Abstract Donna Haraway's (1991) concept of partial or situated knowledges has been a major influence on feminist methodological debates within geography. In this paper, I argue that geographers can interrogate the partiality of knowledge by developing research designs that incorporate methods derived from different epistemological traditions. The silences and gaps between data sets can be explored to interrogate the partiality of knowledge produced in different theoretical and methodological contexts. Also, advocates of interpretive methodologies can add substantially to theoretical debates over epistemology by demonstrating how the results from all methods are incomplete and subject to power – and positionality – laden interpretations. Using different methods is one way to highlight this issue and to challenge the hegemony of positivist science within mainstream academic and policy circles.

Introduction

Donna Haraway's (1991) notion of partial and situated knowledges has been a major influence on feminist methodological debates within geography. Her concept has been applied to feminist work to emphasize that an omniscient, detached observer stance is not possible within any kind of scholarly research (Gibson-Graham, 1994; McDowell, 1992; Moss, 1995, 2002; Rose, 1997). Central to the concept of situated knowledges is the idea that there is no one truth out there to be uncovered and, as a result, all knowledge is partial and linked to the contexts in which it is created. In the following, I expand upon

[1]

the idea of situated knowledges by arguing that geographers can interrogate the partiality of knowledge through mixed method research design.

While most feminist and critical geographers embrace the notion of situated knowledges, few have attempted to examine situatedness to the extent that Haraway (1991) did in her early work on primate biology. Haraway demonstrated how interpretations of primate group behaviour were highly gendered and reflected the positionality of the researchers as much as they reflected the dynamics of primate social groups. She used this work to argue for a new understanding of objectivity that takes seriously different kinds of knowledges and explicitly recognizes that academic work is situated, political and partial. These insights are now taken for granted among feminist geographers, and indeed in any critical work attention to how positionality and power influence the knowledge production process is expected. As a consequence, feminist methodological debates have engaged with issues of power in the research process (for example, Dyck, 1993; Elwood and Martin, 2000; Gibson-Graham, 1994; Katz, 1996; McDowell, 1992; Moss, 2002; *Professional Geographer*, 1994; Staeheli and Lawson, 1995; Wolf, 1996) and have provided insights into the day to day interrelationships that both 'blur' and 'specify' the distinction between researcher and researched, as well as the broader epistemological and institutional contexts within which researchers operate. The importance of these insights not withstanding, here I focus explicitly on partiality itself as an object of interest: my objective is to argue that many feminist geographers have squandered opportunities to challenge 'scientific knowledge' by eschewing quantitative and other 'hard science' methods. In keeping with this objective, I shift the debate away from power and positionality by discussing some of the epistemological and methodological implications of mixing methods.

The next section briefly reviews the quantitative/qualitative methods debate within feminist geography to highlight the methodological issues at stake in mixing methods. I then briefly describe the research design I used to investigate community forestry in Nepal to ground the succeeding discussion on epistemology in relation to the methods I used. I draw from my case study in Nepal to illustrate my argument and conclude with the importance of engaging directly with 'scientific knowledge' to challenge its hegemony.

Quantitative and Qualitative Methods

In 1995, several feminist geographers explicitly engaged with issues of positionality, power and quantitative methods in a special issue of *Professional Geographer* entitled 'Should Women Count?' As Mattingly and Falconer Al-Hindi (1995) made clear, it is the positivist epistemology of quantitative methods and their operationalization within research designs that are of primary concern. In particular, the claims of objectivity and neutrality made by the vast majority of researchers working with quantitative methods are considered to be problematic.

To my mind, this debate brought to the surface a tension within feminist geography between scholars who were trained before postmodernism and cultural studies came to dominate much of feminist geography and those trained more recently. Prior to (roughly) the 1990s, most feminist geographers were engaged in a project to make women and women's contributions to geographical processes visible. In this largely structuralist work, counting was critical as geographers were able to systematically show the ways in which women are discriminated against in a range of social contexts and the failure of

many centrally collected statistics to capture these issues (see critiques by Hanson, 1992; McDowell, 1991; Radcliffe, 1991; Safa, 1981; Sassen-Koob, 1984; and Staeheli and Lawson, 1995).

More recent work in feminist geography has emphasized the construction of space and difference such as gender, class, race and identity, noting the various ways in which power and knowledge are embodied and situated (Gibson-Graham, 1994; Kobayashi, 1994; Longhurst, 2001; McDowell, 1999; Moss, 2002). This research has derived primarily from post-modernist theoretical traditions and rather than explicitly seeking to reveal that men and women are positioned differently, geographers seek to understand the social and cultural processes that (re)produce such inequalities (Longhurst, 2001). Qualitative methods are well suited to this kind of work as they are able to capture both issues of power and oppression and to interrogate how gender is embedded in the construction of knowledge itself (Lawson, 1995; Mattingly and Falconer Al-Hindi, 1995).

As a result of these theoretical and methodological trends, the merits of quantitative methods were questioned. Yet most geographers acknowledge that what is most important is not which methods are used, but *how* they are used to ask *which* kinds of questions and how the results are interpreted (Rocheleau, 1995; Sheppard 2001). Others have pointed out that quantitative methods are not by necessity positivist (Barnes and Hannah, 2001; Kwan, 2002). Many feminist geographers, however, prefer to use exclusively in-depth interviewing and other qualitative techniques as they provide rich, detailed and contextually grounded data consistent with research questions that seek to understand embodied and situated issues (Moss, 2002).

In moving the earlier debate on quantitative and qualitative methods in a new direction, I want to explore how different methods can be used to illustrate the partiality of knowledge. While feminist geographers do mix epistemologically diverse methods, they rarely use them to analyze a set of research questions at the same scale or give the methods equal importance. Rather, quantitative data are most often used to provide the context and qualitative data to explore more nuanced research questions. It is this insistence that qualitative methods are more suited for in-depth, feminist work that I want to challenge. I argue two main points; first, that mixing methods in the way I propose can yield rich insights by analyzing the discrepancies between the results. Second, linking methods provides opportunities to examine the partiality of knowledge produced in different theoretical and methodological contexts.

Mixing Methods

Dianne Rocheleau (1995) has discussed the merits of mixing methods from different epistemological traditions to address a set of research questions, emphasizing the value of triangulating the results to produce a narrative that is able to capture gendered differences in access to, control over and knowledge of resources. Her work demonstrates some of the creative ways in which methods such as interviews, maps and surveys can be mixed to produce narratives that are sensitive to gender, power and context and incorporate alternative knowledges. And yet, understood in these terms, triangulation is a technique whereby the results from one method are compared in relation to another method to ensure the results are *consistent* or *corroborate* each other, thereby validating the data (Denzin and Lincoln, 1998; Silverman, 2000; Yin, 1994). For example, interview and observation results can be triangulated to ensure that they produce the same results; if

not, the results of one method or both would be drawn into question. In consequence, an overarching framework of intelligibility is produced.

While I support this form of triangulation in some contexts (and have used it in my work), here I am interested in the silences and incompatibilities that become evident when data sets produced by diverse methodologies are brought together. This form of triangulation, or "mixing methods," allows for the notion that such knowledges are partial and that different vantage points – for example interview participants' perspectives versus researchers' results from observation – will produce different views of particular processes and events, such as those constituting community forestry.

In my own work on community forestry in Nepal, I used qualitative, ethnographic techniques, such as oral histories, participant-observation and in-depth interviewing, as well as aerial photo interpretation and quantitative vegetation inventory. In addition to highlighting the situatedness and partiality of knowledge, the Nepali case study also helps to show the importance of challenging 'dominant' representations of forest change – in this case aerial photo interpretation – not by rejecting them outright, but by demonstrating explicitly how they provide only one part of the story of forest change. This is a particularly important project in Nepal where increasingly remote sensed data are used to determine changes in forest cover, land use and environmental degradation (Soussan, Shrestha and Uprety, 1995; Pradhan and Shrestha, 1997; Bitter and Shrestha, 2000).

Silences and Incompatibilities in Community Forestry

Community forestry in Nepal is a government-sponsored development program that turns management of forests over to village user-groups. It is designed to promote sustainable use of forest resources while providing for villagers' basic needs. In the past fifteen years, the program has also been seen as a vehicle for promoting economic development and democratic institutions throughout Nepal (Arnold, 1998; Gilmour and Fisher, 1991; Graner 1997). Between 1993 and 1999, I worked with a user-group in northwestern Nepal, consisting of three villages, Chain, Hernikanth and Sangkhola, which together manage Pipledi community forest.

My research sought to interrogate nature-society issues by focusing on how cultural understandings of forestry and the social-political contestations embedded within forest use shape the implementation of a resource-based development program. I examined how resource use and management is a site for the contestation and reproduction of social difference such as gender, class and caste and the implications of this for development policy and practice (Nightingale 2001, 2002). These processes are also mutually constitutive of ecological conditions and one of my challenges was to explore both theoretically and empirically these inter-relationships (Nightingale, 2003).

This project rested on two key theoretical commitments. First, I conceptualised constant change in cultures and ecosystems, recognizing that there is a dynamic, complex relationship between communities and their land (Botkin, 1990; Scoones, 1997; Turner et. al., 1990; Zimmerer, 1994). Second, as I have argued above, *all* knowledge is partial and situated (Haraway, 1991; Rose, 1997). Methodologically, these theoretical commitments required me to think through the research design consequences of analysing complex change and incomplete knowledge of those processes. For me, mixing methods was appropriate, in that no one method could hope to capture both ecological change –

influenced by and 'independent' of human actions[2] – and the social-political complexities that are co-productive of ecological conditions. And, the resulting data sets produce insights into the social construction of knowledge within this case study context. Providing different methods are considered robust on their own terms (i.e. within their own paradigms), the silences and discrepancies between the results can be usefully assessed.

In keeping with my theoretical commitments, I decided to mix ecological oral histories with aerial photo interpretation. Ecological oral history is a qualitative method that allows an analysis of landscape change from the perspective of people who have used that land over time (Rocheleau, 1995) and are intimately embedded within people's life experiences. When I asked people to talk about the way the forest used to be, they never told me only about the trees, understory plants and other ecological conditions. Instead, their assessments of ecological conditions were woven together with accounts of personal, political and community change. The narratives present a view from a very particular place (see also Cope, 2002). Therefore, the variations in the histories different people told to some extent reflected how they were positioned differently in relation to the land and control over it, and to me. Although I found I was told much richer stories by people who knew me well (Nightingale, 2001), I still could not account for all the differences in the narratives. Epistemologically, oral histories have been used by feminists to tell alternative histories and to present multiple perspectives by interpreting the values, symbols and contradictory histories contained in individual accounts (Behar, 1993; Nagar, 1997). While these narratives are snap shots in a sense, they also continuously link the past with the present through the words and experiences of the individuals telling them.

Aerial photo analysis, while also dependent on interpretation, is embedded within a different epistemology.[3] The research task is to 'correctly' interpret the land cover and land forms in the images, aided by checking areas on the photos with areas on the ground, known as "ground truthing," systematic categorisation of different textures, colours and shades within the photos, and experience. Aerial photos are in some sense the quintessential Cartesian view from "no-where" (Haraway, 1991; Sheppard, 2001). The technique produces an image of land cover change that is flat, remote and static. Aerial photos are quite literally snap shots, yet they are often assumed to represent the land over a longer period of time because many vegetation types change relatively slowly. In my own work, I analyzed aerial photos from 1978 and 1996 and mapped the changing forest cover of the area (Figure One).

Importantly, aerial photos require specialized knowledge to interpret (see Demeritt, 2001). The photos themselves take quite a bit of time to read effectively, and the maps generated often require relatively strong map reading skills to interpret. Figure One shows an image I produced from the aerial photo interpretation as an example of this.

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[2] Here I am drawing a largely artificial distinction between human induced and so-called natural ecological changes (cf. Castree and Braun, 1998; Cronon, 1996). I prefer to retain this analytical distinction, however, in order to analyze changes in the physical environment that are not direct effects of human action (Nightingale, 2001, 2003).

[3] While there is a large literature on the politics of mapping and map interpretation amongst cartographers, the need for critical analysis of remotely sensed images is rarely acknowledged by most remote sensing specialists who see the images as inherently neutral (see Curry, 1998; Harris and Weiner, 1998; and Sheppard, 2001 for some important exceptions in relation to GIS).

The areas of different land cover have been mapped onto the only topographic map available for the valley,[4] and through this mapping some of the place names have been obscured. Despite producing the original hand-drawn version of this map, I nevertheless have a hard time rectifying this image with the forest and valley in which I worked.

I began with the premise that these two methodologies were equally valid –that they both 'correctly' mapped the phenomenon in question (Denzin and Lincoln, 1998; Silverman 2000 p. 91). Given this validation, what if the histories and the photos did not tell the same story? What would that tell me about both oral histories and aerial photo interpretation? Placed in conjunction with each other, the resulting data sets revealed far more about the political and social struggles around claiming forest land and ecological improvement than either one did in isolation. Specifically, I was able to understand how small areas of forest improvement symbolise the success of the user-group and are crucial to the user-groups' control over that land.

The oral histories talked of wild and thick forests that dominated many parts of the valley when my respondents were children: roughly 35-60 years ago. At this time, the forest was managed by the village headman and many people ascribed the good forest conditions to their cultural traditions that ensured everyone followed the rules. About twenty-five years ago, however, the district forest office (DFO) took over management of the forest and ecological conditions rapidly declined. As one woman said:

> Before the community forest it was very difficult. But in 1976 we had a good forest… After 1976 the forest became really bad… People would cut a small sapling for firewood, and all they would get would be three pieces of firewood. For three pieces of firewood, why cut a whole tree? Leaf litter – or anything else – was not available. After that we all got together and made the community forest. After the forest came into our own hands it is much better. (Interview with a Brahmin woman, February 20, 1999).

Other people spoke in great detail about how much more readily available firewood, timber, leaf litter and other resources had become since the forest was returned to village control in 1991 through the community forestry program.

The oral histories were not wholly consistent. Some people indicated that recent improvements were few, but insisted that community forestry had made their lives easier as the following exchange indicates.

> *Andrea*: What do you like best about the CF [Community Forestry]?
>
> *Chetri woman*: It has become very easy (*sukka*) for us now that we have the committee. It is not difficult/troublesome [literally, 'there is no *dukka*']

[4] The original map itself is highly inaccurate, especially the topographic lines. The photos were taken for the forest department in 1978 and the topographic survey department in 1996. The politics of producing these images is another interesting and important issue, but outside the scope of this paper. See Demeritt (2001) for an analysis of the politics of picturing forest resources in the United States.

> *Another Chhetri woman jumped into insist*: There isn't that much *dukka*, there also isn't a lot of *sukka*, it's ok [only]. (Interview with a group of Chhetri women June 14, 1999).

In short, then, the histories indicate that the forest was over-harvested after the village lost control of it in (roughly) 1976, but conditions have improved in recent times. The timeline suggested by different participants varied, but all were generally consistent with decline under the DFO and improvement after the establishment of the community forest.

The aerial photos also show improvement between 1978 and 1996 (see Figure One), but this is balanced out by areas that have been cleared. By 1978, the district forest office had control over the forests, and by 1996 the community forest had been operating for five years. Thus, the early photos capture the forest as it was under DFO management and the later photos show five years after village management began. Because of the scale (1:50,000) and the topographical distortion of the photos, only limited interpretations can be made, but it is possible to show changes from one land use type to another. I have flattened out some of the variation in this image (other, more complex images were produced from the data, but they are harder to read) by including both regeneration of forest from cleared land and an obvious increase in forest density in the 'regrowth' category. Similarly, I have included areas that have been dramatically thinned as well as those that have been completely cleared in the 'clearing' category. 'Forests' and 'open' are those areas that have not changed. The three villages that manage the forest in question are named in the north and eastern side of the map (Chain, Hernikanth and Sangkhola). Areas that have begun to regenerate are a relatively large section near Sangkhola and Hernikanth, and just above Chain. While harvesting is currently forbidden in the latter locality, people look forward to harvesting firewood in another 5-10 years. Near Sangkhola, land has been cleared for agriculture but other parts of the forest that were cleared or partially cleared in 1978 have begun to regenerate. The total change is an increase of 4.7% in relatively dense forest area, with a 1.8% decline in open or cleared land, and 2.9% decrease in patchy or thin forest (Nightingale, 2001). Thus the total change is quite small but shows an overall increase in forest cover and small areas of significant regeneration since 1978.

To ensure that the results from these two methods were robust *on their own terms*, I used several different tests of reliability. For the histories, I used theoretical saturation — asking the same questions to different people until I was getting no new information (Krueger, 1998) — particularly for the information about the forest conditions. I also interpreted the histories without using this criterion in order to analyze other aspects of them, especially important differences in the narratives that ensued from people's positionality in relation to the rest of the user-group, myself and my research assistants.

I also triangulated (after Denzin and Lincoln, 1998; Yin 1994) the interview results with participant observation to the extent that I could. Many of my research participants discussed very important information about forest change when we harvested firewood or examined the community forest boundaries. In this way, the oral histories were validated by triangulation with other methods of similar epistemological origins.

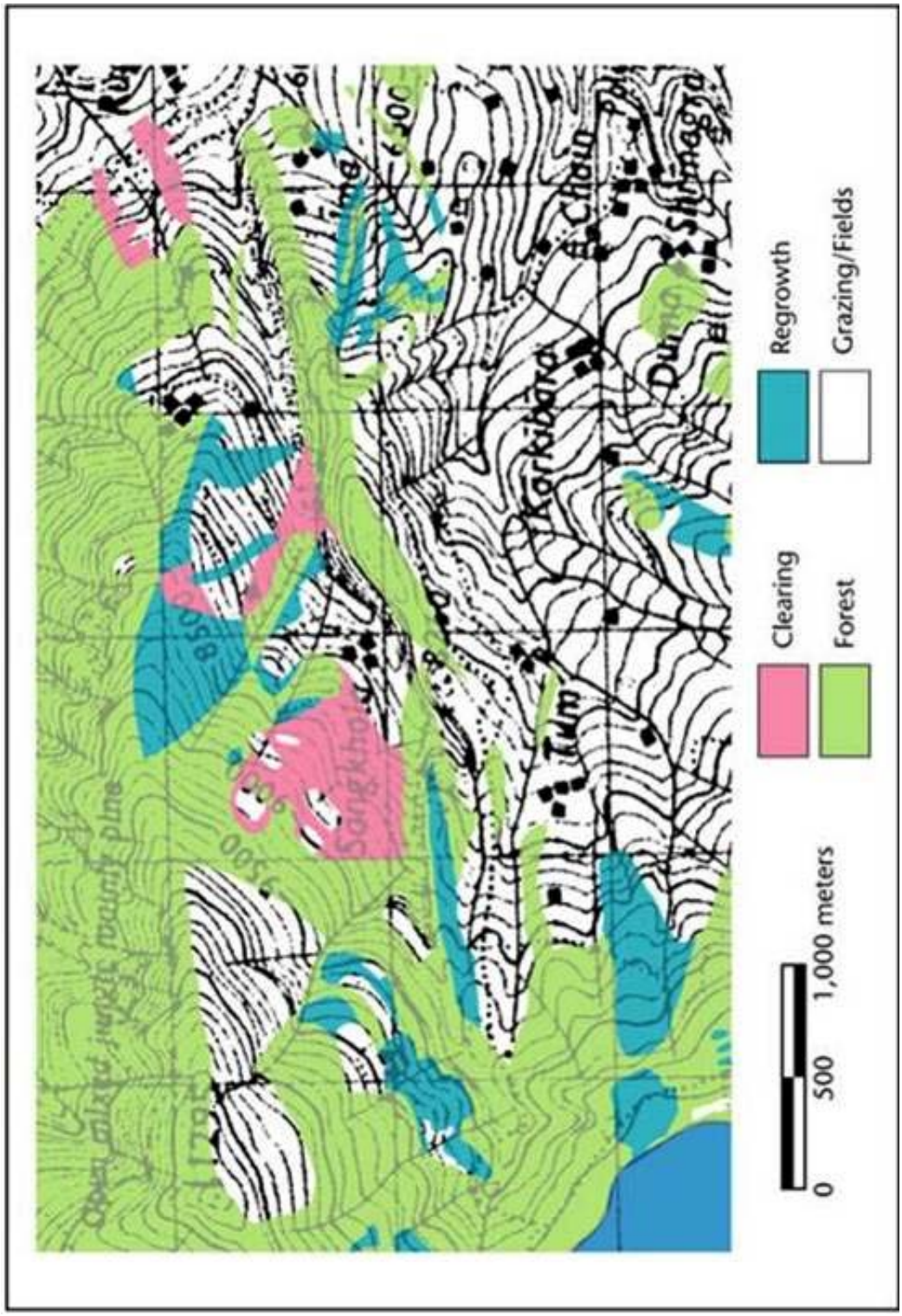

Figure 1: Forest cover change in Pipledi forest and surroundings 1978-1996.

The aerial photo interpretation was done by mapping the boundaries of the different land cover types for each set of photos on top of each other. This allowed for a calculation of percent change in area of each cover type without needing to calculate absolute area. I did not try to correct quantitatively for the distortion as these calculations are extremely complex and time consuming and do not sufficiently increase the accuracy to warrant their usage. The kind of analysis I undertook avoids the problems of calculating absolute area from photos with high topographical relief (Bolstad, 1992), yet allows for an analysis of percentage change.

To ensure the robustness of the data the aerial photos were also triangulated with a vegetation inventory of the forest. This quantitative inventory used plots, sampling a total of 5% of the area; within each plot, the research team counted total trees by species in different size classes, measured the diameter at breast height of each tree and catalogued ground cover species and any obvious disturbance. While doing this survey I also "ground-truthed" the aerial photos by checking the classification of vegetation types in the photos with observations on the ground.

The aerial photos and the oral histories thus are both *internally* valid and yet also provide tellingly different histories of forest change. The photos show that the areas that have improved the most are those closest to the villages but that overall forest cover has changed very little. This information, when compared to the oral histories that emphasise overall improvements, suggests that the accessible areas are of great importance and that villagers value these parts most. They can see tangible signs of improvement in the areas that are most accessible, and to them this *is* a dramatic change.

While this conclusion is perhaps not surprising, without the aerial photo work this would not have been obvious. When I asked people about which parts of the forest were most important they emphasised that the *whole* forest was important and were unwilling to separate it into different parts. Their answers shifted between describing the value of the forest in terms of the resources provided and the improvements made by community forestry due to their authority to exclude outsiders. Similarly, because some of these accessible areas are still off-limits for firewood collection, participant observation did not reveal the value of these parts. It was only by analyzing the incompatibilities between the photos (that showed minor change) and the histories (that insisted resources are much more accessible) that I was able to appreciate the inherent silences, and hence the partiality, of both methodologies. That is, the dramatic improvements talked about by the villagers were in reference to some places and *not others*, while the images captured by the aerial photos were devoid of local meaning.

But perhaps more significantly, the inconsistencies between the two "data sets" lent insight into the importance of control over the forest. As I mentioned above, some respondents did state that forest conditions had not improved much, but they were adamant that community forestry was better than state forestry management. Of course, these sentiments reflect not only the ecological conditions but also the political dimensions. If the villagers are seen to mis-manage their land, it can be re-classified as national forest and turned over to the DFO again. By insisting on recent improvements in *their* forest, therefore, respondents were making ownership claims. The discrepancies between the aerial photo work and the oral histories helped to make it clear that they were referring to small areas of significant resource improvement in key places, and that resources and control over them were inseparable issues.

Conclusions: Interrogating partial and situated knowledges

The epistemological issues raised by using different methods together highlight the relationship between research design and methods. I have used aerial photo interpretation in a non-positivist way by refusing to accept the maps generated as telling the 'real' story of forest change. This is not to reject the information produced by the photos, as this "data set" was critical for my analysis as outlined above. But, by comparing the inconsistencies rather than triangulating the histories and the photos, the objective, neutral image produced by the photos is challenged. In order to do this, however, the photos and the histories have to be used on equal terms and to investigate questions at roughly the same scale. A different research design might have used the photos merely to set the context for forest change and then used the histories to detail the cultural and political aspects of that change. Instead, by setting the data sets in relation to each other I have allowed for both to be acknowledged as partial and situated.

In doing so, I have problematized not only the notion that qualitative data provide a necessarily more 'authentic' resource, but also the authoritative status of quantitative methodologies in this specific context. Within policy circles and much of academia (particularly the natural sciences) the inherent neutrality and merits of remote sensing is largely unchallenged; indeed, it is the preferred type of data for managers. National and international environmental monitoring, evaluation and policy are increasingly dominated by remote sensed data. This is particularly true in Nepal where the rugged terrain and lack of transportation make travelling to remote areas difficult and time consuming and over the past several years, Maoist activity in the hills has made travel increasingly dangerous. These hegemonic representations are not views from "no-where;" they are views from a detached (increasingly from outer space) position and as such do represent a *situated, partial* view. It is therefore critical to demonstrate how and why remotely sensed data are partial and thus inadequate by itself for addressing social-ecological issues.

I want to end by urging feminist geographers to consider using multiple methods and data sources in their work as I have described. Feminist geographers have challenged the dominance of quantitative methods by engaging with their epistemological origins and questioning their relevance for particular kinds of research questions. I have noted here that mixing methods and analysing them in relation to each other provides another way to interrogate positivist science. Using different methods gives feminists an opportunity to demonstrate how hegemonic representations, such as remote sensed data for understanding land cover change, are insufficient. It is vital for scholars concerned with issues of power, positionality and hegemony to engage with this kind of work I order to exert influence within policy and development circles where positivist, statistical 'scientific' research continues to be dominant. Nature-society geography and political ecology often engages with physical science data to deconstruct it or provide a physical background (cf. Braun and Castree, 1998; Demeritt, 2001; Peet and Watts, 1996), yet as the case study presented here shows, physical data sets can be utilized in conjunction with other methods to probe human-environment issues in new ways. Qualitative, interpretive methods provide rich, thick results, but combined with other methods, these results can be richer and thicker, and we can demonstrate how fragmented and situated all knowledge is. What is at issue is not whether different methods, qualitative or quantitative, are feminist, but rather do they fully embrace the notion of *different* knowledges. When different kinds of knowledges are

taken seriously and all are critically interrogated, richer results are generated, new interpretations emerge and the supremacy of any one kind of knowledge is challenged.

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References

Arnold, J.E.M. 1998. *Managing Forests as Common Property*. Rep. 136, Food and Agriculture Organization of the United Nations, Rome.

Barnes, Trevor J. and Mathew Hannah. 2001. Guest Editorial: The Place of Numbers: Histories, Geographies, and Theories of Quantification. *Environment and Planning D: Society and Space* 19, 379-83.

Behar, Ruth. 1993. *Translated Woman: Crossing the Border with Esperanza's Story*. Boston: South End Press.

Bitter, Peter and Bhuban Shrestha. 2000. Orthophotographs to Assist Participatory Forest Management: Application in the Jhikhu Khola Watershed, Nepal. *Issues in Mountain Development*. Kathmandu, Nepal: International Centre for Integrated Mountain Development.

Bolstad, Paul V. 1992. Geometric Errors in Natural Resource GIS Data: Tilt and Terrain Effects in Aerial Photographs. *Forest Science* 38, 367-80.

Botkin, Daniel B. 1990. *Discordant Harmonies: A New Ecology for the Twenty-First Century*. New York: Oxford University Press.

Braun, Bruce and Noel Castree. 1998. *Remaking Reality: Nature at the Millennium*. New York: Routledge.

Castree, Noel and Bruce Braun. 1998. The Construction of Nature and the Nature of Construction: Analytical and Political Tools for Building Survivable Futures. In Bruce Braun and Noel Castree (eds.), *Remaking Reality: Nature at the Millennium*. New York: Routledge, 3-42.

Cope, Meghan. 2002. Feminist Epistemology in Geography. In, Pamela Moss (ed.), *Feminist Geography in Practice: Research and Methods*. Oxford: Blackwell Publishers, 43-55.

Cronon, William. 1996. The Trouble with Wilderness; or, Getting Back to the Wrong Nature. In William Cronon (ed.), *Uncommon Ground: Rethinking the Human Place in Nature*, New York: W.W. Norton and Company, 69-90.

Curry, Michael. 1998. *Digital Places: Living with Geographic Information Technologies*. London: Routledge.

Demeritt, David. 2001. Scientific Forest Conservation and the Statistical Picturing of Nature's Limits in the Progressive-Era United States. *Environment and Planning D: Society and Space* 19, 431-59.

Denzin, Norman K. and Yvonna S. Lincoln, (eds.), 1998. *Collecting and Interpreting Qualitative Materials*. Thousand Oaks, CA: Sage Publications.

Dyck, Isabel. 1993. Ethnography: A Feminist Method? *The Canadian Geographer* 37, 52-7.

Elwood, Sarah and Deborah Martin. 2000. "Placing" Interviews: Location and Scales of Power in Qualitative Research. *Professional Geographer* 52, 649-57.

Gibson-Graham, J. K. 1994. 'Stuffed If I Know': Reflections on Post-modern Feminist Social Research. *Gender, Place and Culture* 1, 205-24.

Gilmour, D. A. and R. J. Fisher. 1991. *Villagers, Forests and Foresters: The Philosophy, Processes and Practice of Community Forestry in Nepal*. Kathmandu: Sahayogi Press.

Graner, Elvira. 1997. *The Political Ecology of Community Forestry in Nepal*. Saarbrücken: Verl. für Entwicklungspolitik.

Hanson, Susan. 1992. Geography and Feminism: Worlds in Collision? *Annals of the Association of American Geographers* 82, 569-86.

Haraway, Donna. 1991. *Simians, Cyborgs and Women*. New York: Routledge.

Harris, Trevor and Daniel Weiner. 1998. Empowerment, Marginalization and 'Community-Integrated' GIS. *Cartography and Geographic Information Systems* 25, 67-76.

Katz, Cindi. 1996. The Expeditions of Conjurers: Ethnography, Power and Pretence. In Diane L. Wolf (ed.), *Feminist Dilemmas in Fieldwork*, Boulder: Westview Press, 170-83.

Kobayashi, Audrey. 1994. Coloring the Field: Gender, "Race," and the Politics of Fieldwork. *Professional Geographer* 46, 73-80.

Krueger, Richard A. 1998. *Analyzing and Reporting Focus Group Results*. Thousand Oaks: Sage Publications.

Kwan, Mei-Po. 2002. Quantitative Methods and Feminist Geographic Research. In Pamela Moss (ed.), *Feminist Geography in Practice: Research and Methods*, Oxford: Blackwell Publishers, 160-72.

Lawson, Victoria. 1995. The Politics of Difference: Examining the Quantitative/Qualitative Dualism in Post-Structuralist Feminist Research. *Professional Geographer* 47, 449-57.

Longhurst, Robyn. 2001. Geography and Gender: Looking Back, Looking Forward. *Progress in Human Geography* 25, 641-8.

Mattingly, Doreen J. and Karen Falconer Al-Hindi. 1995. Should Women Count? A Context for Debate. *Professional Geographer* 47, 427-435.

McDowell, Linda. 1991. Life without Father and Ford: The New Gender Order of Post-Fordism. *Institute of British Geographers Transactions* 16, 400-19.

McDowell, Linda. 1992. Doing Gender: Feminism, Feminists and Research Methods in Human Geography. *Transactions of the Institute of British Geographers* 17, 399-416.

McDowell, Linda. 1999. *Gender, Identity and Place: Understanding Feminist Geographies*. Minneapolis: University of Minnesota Press.

Moss, Pamela. 1995. Reflections on the 'Gap' as Part of the Politics of Research Design. *Antipode* 27, 282-90.

Moss, Pamela, (ed.). 2002. *Feminist Geography in Practice: Research and Methods*. Oxford: Blackwell Publishers.

Nagar, Richa. 1997. Exploring Methodological Borderlands through Oral Narratives. In John Paul Jones III, Heidi J. Nast and Susan M. Roberts (eds.), *Thresholds in Feminist Geography: Difference, Methodology, Representation*, Lanham, MD: Rowman and Littlefield.

Nightingale, Andrea J. 2001. *A 'Trialectic' of Community Forestry Management in Mugu District, Western Nepal: Power, Cultural Meanings and Ecology*. Doctoral Dissertation thesis. University of Minnesota, Minneapolis.

Nightingale, Andrea J. 2002. *The Nature of Gender: Work, gender and environment*. Unpublished manuscript. School of GeoSciences, University of Edinburgh.

Nightingale, Andrea J. 2003. Nature-Society and Development: Cultural, social and ecological change in Nepal. *Geoforum* (forthcoming).

Peet, Richard and Michael Watts. 1996. *Liberation Ecologies: Environment, Development, Social Movements*. New York: Routledge Press.

Pradhan, Pradmod S. and Basanta Shrestha. 1997. Geographic Information Systems and Remote-sensing Technologies for Mountain Development. *Issues in Mountain Development*. Kathmandu, Nepal: International Centre for Integrated Mountain Development, 97.

Professional Geographer, 1994. Women in the Field: Critical feminist methodologies and theoretical perspectives. 46, 54-102.

Professional Geographer, 1995. Should Women Count? The role of quantitative methodology in feminist geographic research, 47, 426-458.

Radcliffe, Sarah A. 1991. The Role of Gender in Peasant Migration: Conceptual Issues from the Peruvian Andes. *Review of Radical Political Economics* 23, 129-47.

Rocheleau, Dianne. 1995. Maps, Numbers, Text and Context: Mixing Methods in Feminist Political Ecology. *Professional Geographer* 47, 458-66.

Rose, Gillian. 1997. Situating Knowledges: Positionality, Reflexivities and Other Tactics. *Progress in Human Geography* 21, 305-20.

Safa, Helen I. 1981. Runaway Shops and Female Employment: The Search for Cheap Labor. *Signs* 7, 418-33.

Sassen-Koob, Saskia. 1984. Notes on the Incorporation of Third World Women into Wage-Labor Through Immigration and Off-Shore Production. *International Migration Review* 18, 1144-67.

Scoones, Ian. 1997. The Dynamics of Soil Fertility Change: historical perspectives on environmental transformation from Zimbabwe. *The Geographical Journal* 163, 161-9.

Sheppard, Eric. 2001. Quantitative Geography: Representations, Practices, and Possibilities. *Environment and Planning D: Society and Space* 19, 535-54.

Silverman, David. 2000. *Doing Qualitative Research: A Practical Handbook*. London: Sage Publications.

Soussan, J., B. K. Shrestha, and L.P. Uprety. 1995. *The Social Dynamics of Deforestation in Nepal*. New York: CRC Press-Parthenon Publishers.

Staeheli, Lynn A. and Victoria A. Lawson. 1995. Feminism, Praxis, and Human Geography. *Geographical Analysis* 27, 321-38.

Turner, B. L., William C. Clark, Robert W. Kates, John F. Richards, Jessica T. Mathews and William B. Meyer. 1990. *The Earth as Transformed by Human Action: Global and Regional Changes in the Biosphere over the Past 300 Years.* Cambridge: Cambridge University Press.

Wolf, Diane L. 1996. Situating Feminist Dilemmas in Fieldwork. In Diane L. Wolf (ed.), *Feminist Dilemmas in Fieldwork*, Boulder: Westview Press, pp. 1-55.

Yin, Robert. 1994. *Case Study Research: Design and Methods.* Thousand Oaks: Sage Publications.

Zimmerer, Karl. 1994. Human Geography and the "New Ecology": The Prospect and Promise of Integration. *Annals of the Association of American Geographers* 84, 108-25.

Zimmerer, Karl S. 2000. The Reworking of Conservation Geographies: Nonequilibrium Landscapes and Nature-Society Hybrids. *Annals of the Association of American Geographers* 90, 356-69.